

# ECE 345 / ME 380: Introduction to Control Systems

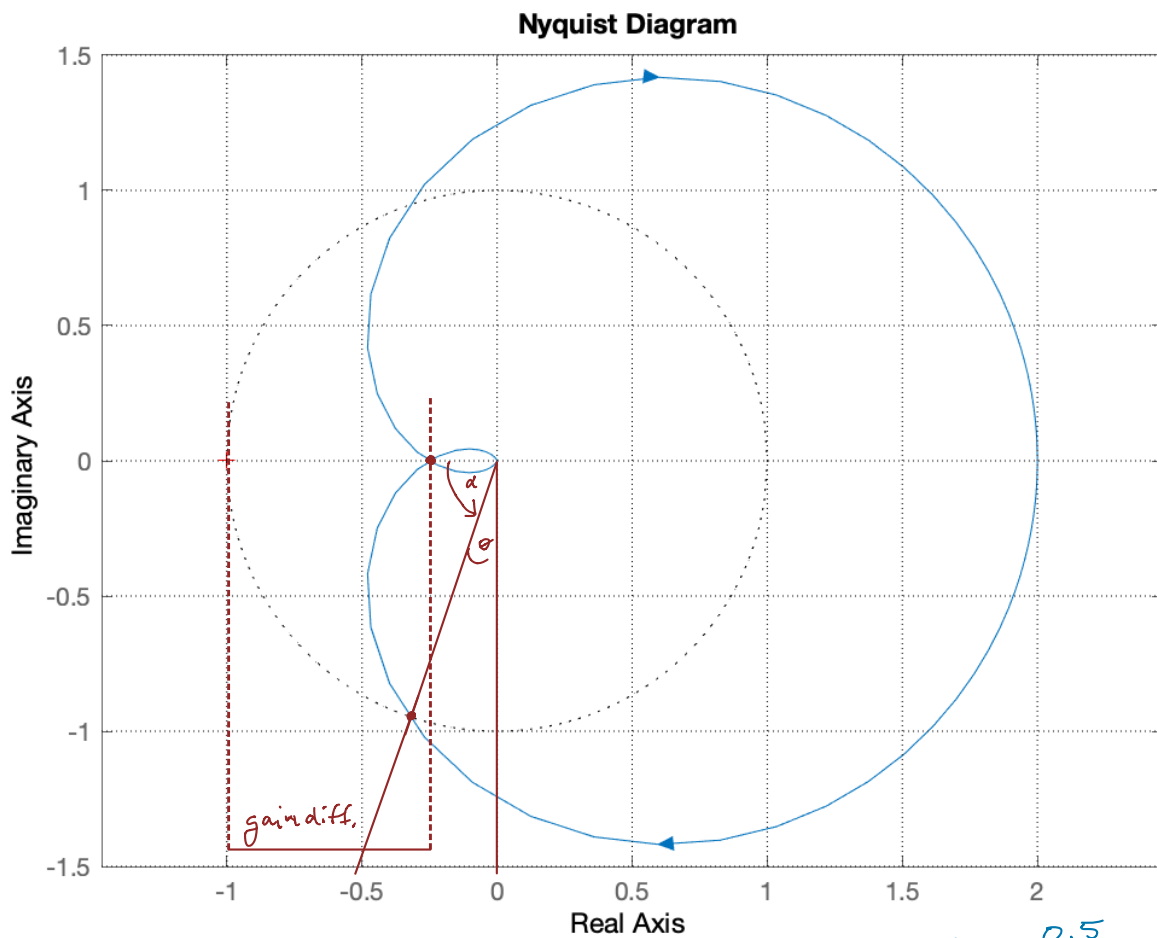
## Collaborative Quiz #5 Grading Sheet

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This quiz is open-note and open-book. Calculators and other electronic resources are allowed. For each of the questions, clearly write the correct answer.

1. A & B
2. C
3.  $\Phi_m \approx 71.57^\circ$      $G_m \approx 4 = 12\text{dB}$

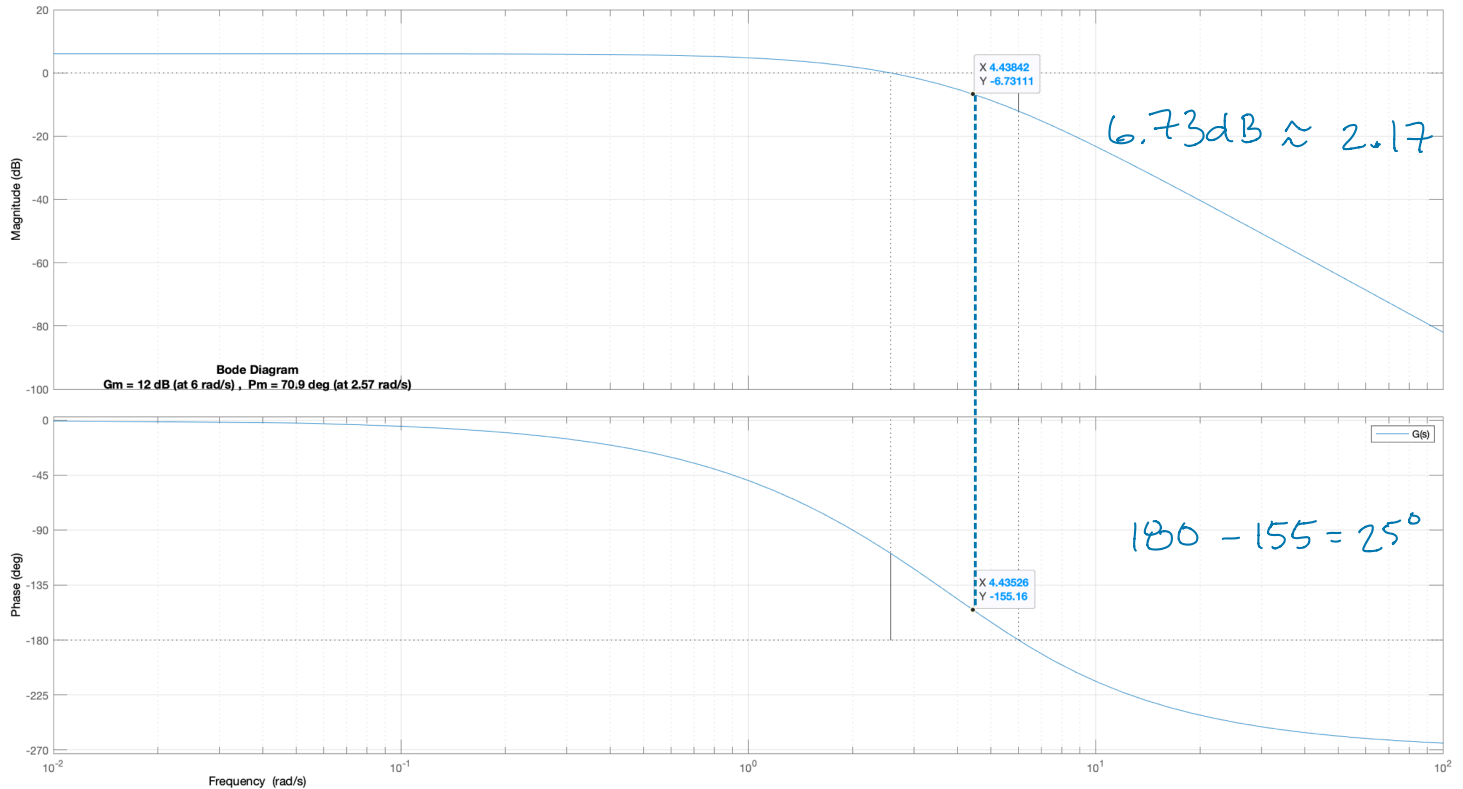


4. 2.17

$$\tan(\theta) = \frac{-0.5}{-1.5} = 18.43^\circ$$

$$\alpha = 71.57^\circ$$

5. It is an acceptable gain; however,  $10.6^\circ$  is a very small margin of stability. The quad rotor is more susceptible to the slightest external disturbance.



### Statement of Effort

By signing below, I pledge that I have written this quiz as per the indicated instructions, and fully participated in the group.

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